

Facts, Findings and Recommendations - Part 3

Southern Kansas Outbreak

Local Office Warning and Forecast Service

- FACT:** NWSO Wichita issued two NOWs at 4:12 p.m. and 6:38 p.m., predicting the potential for severe thunderstorms and the possibility of isolated tornadoes.
- FACT:** The initial tornado warning for *southeast* Sedgwick County was issued at 8:16 p.m. with a lead time of 14 minutes. This warning was corrected 2 minutes later to include *eastern* Sedgwick County. SVSs issued at 8:33 p.m., 8:46 p.m. and 8:52 p.m. contained information on the tornado's location or damage, as reported by spotters in Sedgwick County.

Systems

- FACT:** The NWSO Wichita WSR-88D radar (KICT) failed at 7:19 p.m. The Wichita electronic technician replaced a trigger amplifier and two shorted backswing diodes in the modulator. The radar was brought back on-line at about 10:15 p.m. The failure does not appear to be associated with any specific action on the part of the radar operator (e.g., power source change, or Volume Coverage Pattern change). However, these components could weaken over time due to power transfers and surges. The OSF is in the process of installing Transition Power Maintenance Systems (TPMSs) at all WSR-88D sites, which will ease power transitions and surges. The NWSO Wichita WSR-88D TPMS installation is scheduled for the year 2000.
- FACT:** Two of the local television stations have their own local radars, in addition to the NIDS products, such as the composite radar imagery from Weather Services Incorporated. The other station had continuous NIDS access to the Vance AFB WSR-88D via a NIDS vendor. Most of the time, this station's meteorologist displays the Vance AFB radar data when storms are close to the KICT radar. All television stations said they were able to communicate the threat of the approaching tornado despite the outage of the Wichita WSR-88D.

Internal and External Coordination

FACT: NWSO Wichita has developed a strong working relationship with the SKYWARN program and has expanded it within the amateur radio community. This partnership resulted in the prompt and accurate communication of tornado and damage reports throughout the event.

Finding 11: When NWSO Wichita began receiving detailed locations of tornado damage (i.e., street addresses), personnel were not readily equipped to identify the location, since they did not have a local city map. The only map of Wichita was in the Yellow Pages of the phone directory.

Recommendation 11: NWS Regions should ensure that offices have up-to-date, detailed maps for the larger metropolitan areas in their CWA to track significant weather movement and damage reports.

Dissemination

FACT: The sirens were activated by the 911 dispatcher through the Sedgwick County EOC upon receipt of the NWS warning at 8:17 p.m. Lead time on the siren alert to residents in the tornado's path ranged from approximately 12 minutes (Haysville) to 20 minutes (south Wichita).

FACT: The 911 dispatchers disseminated the warning via the All-Channel Override of the Cable Television at 8:18 p.m. to warn television viewers who were not tuned to the local Wichita TV stations.

FACT: Wichita is home to Weather Data Incorporated which had several clients in both Oklahoma and Kansas affected by this event. Using WSR-88D data obtained via NIDS and other data sets, including National Weather Service warnings, the Weather Data Incorporated forecasters disseminated several warnings to their clients. Mike Smith, President of Weather Data Incorporated, cited this event as a good example where the "public-private partnership worked well."

Response

FACT: All those interviewed in the damaged areas commented that they had heard the National Weather Service warnings before the tornado struck. Citizens were clear on the information of the approaching tornado and followed recommended safety measures.

- FACT:** Employees of Norland Plastics in Haysville were warned via NWR. Eighty-five employees were directed by the supervisor to the designated shelter area in the basement. None were injured, although the building was heavily damaged.
- FACT:** Monthly community tornado drills proved beneficial. Thirteen clients of a residential facility for disabled adults moved to the bath tubs and covered themselves. None were injured, although their homes, built on concrete slabs, were almost destroyed.
- FACT:** Since the Wichita area Civil Air Patrol (CAP) does not have access to aircraft for aerial storm surveys, the WCM arranged for an aerial helicopter survey with the Wichita police. Note: A National Memorandum of Understanding between the CAP and the Office of the Federal Coordinator for Meteorological Services and Supporting Research for support of aerial storm surveys, already exists (August 1997) for those NWS offices with active CAP units in their area.
- Finding 12:** On May 4, the day after the event, a ground survey in Sedgwick and Sumner Counties could not be done due to more severe weather. An aerial survey was conducted in Sedgwick County on May 4, and a ground survey was completed in Sumner County on May 5. Weather Service Operations Manual (WSOM) Chapter J-02, section 4.3.3, reads in part: “[It] is the responsibility of the local Meteorologist in Charge or their designated representative to go to the site, survey the damage, and obtain overflight capabilities....”
- Recommendation 12a:** Regions should reemphasize the requirement contained in WSOM Chapter J-02, section 4.3.3, that NWS offices should conduct ground surveys as soon as practical after a severe weather event where there are fatalities, a large number of injuries or significant damage.
- Recommendation 12b:** NWS Regional Meteorological Services Divisions (MSDs) should establish procedures to perform prompt post-storm surveys at forecast offices needing assistance from nearby forecast offices or the regional headquarters.

Training

- FACT:** Proficiency in back-up procedures was critical to the smooth transition of the warning program once the radar failed. In late February and March, the NWSO Wichita staff completed proficiency checks on WarnGen, WISEII, transfer power, calling NCF and use of CRS.
- Finding 13:** The National Weather Service Wichita forecasters were skilled in using the back-up dial-in feature of the PUP to access radar imagery from the Vance AFB WSR-88D.
- Recommendation 13:** NWS Regional MSDs should ensure that office drills include proficiency checks in using the back-up dial-in feature of the PUP.

Supporting Activities

- FACT:** Sedgwick County Emergency Management, in cooperation with the local NWS office, conducted 21 separate spotter training/public safety programs from March 1 to April 8 for over 1,000 participants. The NWSO Wichita WCM conducted two of the sessions and had earlier trained the Sedgwick County Deputy Director to provide the other training seminars.
- FACT:** Within 24 hours of the event, two separate press releases were issued as PNSs at 9:30 a.m. and 4 p.m, May 4, by the NWSO Wichita WCM. These press releases were valuable in reducing the need for media interviews and communicated the information on the tornado's intensity and the timeliness of NWS products.